Trig 8.4

Review Ch. 8.1-8.4

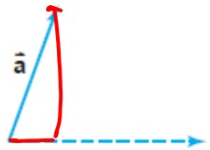
MCT is tomorrow!

Quiz today 8.3-8.4

Lesson 8-1 *(Pages 485–492)*

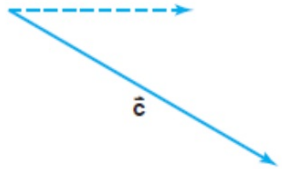
Use a ruler and a protractor to determine the magnitude (in centimeters) and direction of each vector.

1.



2.

3.



Find the magnitude of the horizontal and vertical components of each vector shown for Exercises 1–3.

10. $\vec{a}$ h = 2 cm rt
v = 6 cm up

11. $\vec{b}$

12. $\vec{c}$

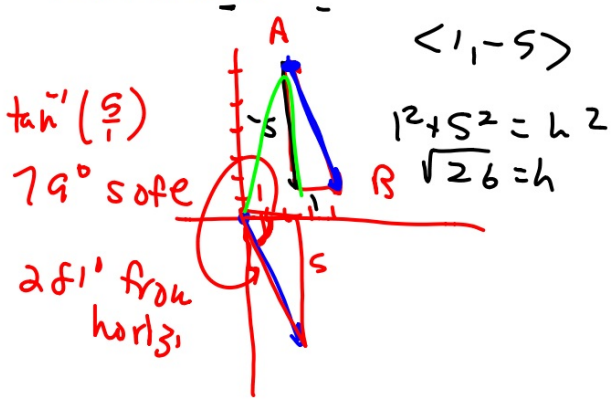
frackets

*and direction

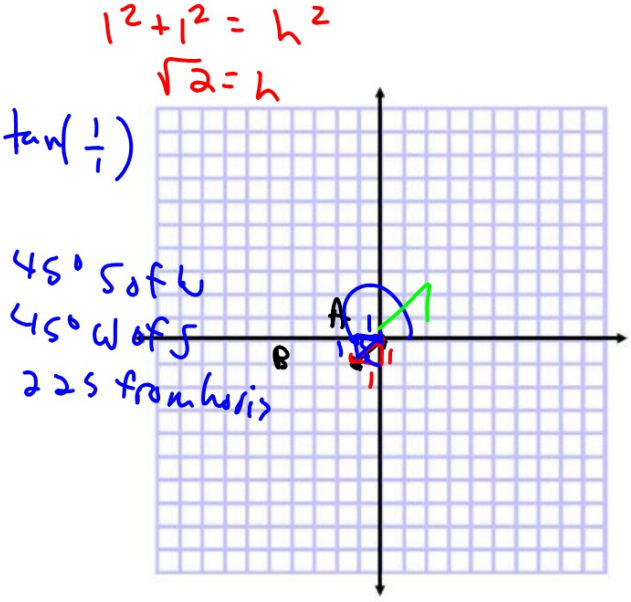
Lesson 8-2 *(Pages 493–499)*

Find the ordered pair that represents $\overline{AB}$. Then find the magnitude of $\overline{AB}$.

1. $A(3, 6), B(4, 1)$



2. $A(-1, 3), B(-2, 2)$

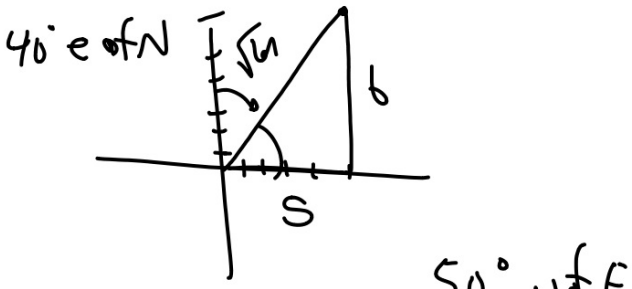


Find the magnitude of each vector and write each vector as the sum of unit vectors.

7. $\langle 5, 6 \rangle$ $5\vec{i}+6\vec{j}$

8. $\langle -2, 4 \rangle$

9. $\langle -10, -5 \rangle$



50° N of E

$\tan\left(\frac{6}{5}\right)$

50° from h.

Lesson 8-3 *(Pages 500–504)*

Find an ordered triple to represent $\vec{p}$ in each equation if $\vec{q} = \langle 1, 2, -1\rangle$, $\vec{r} = \langle -2, 2, 4\rangle$, and $\vec{s} = \langle -4, -3, 0\rangle$.

1. $\vec{p} = 2\vec{q} + 3\vec{s}$

2. $\vec{p} = \vec{q} - \frac{1}{2}\vec{r} + \vec{s}$

$\vec{p} = 2\langle 1, 2, -1\rangle + 3\langle -4, -3, 0\rangle$

$= \langle 2, 4, -2\rangle + \langle -12, -9, 0\rangle$

$= \langle -10, -5, -2\rangle$

$= \sqrt{10^2 + 5^2 + 4}$

$\sqrt{129}$

5. **Physics** If vectors working on an object are in equilibrium, then their resultant is zero. Two forces on an object are represented by $\langle 2, -4, 1 \rangle$ and $\langle 5, 4, 3 \rangle$. Find a third vector that will place the object in equilibrium.

$\langle 2, -4, 1 \rangle + \langle 5, 4, 3 \rangle + ? = \langle 0, 0, 0 \rangle$

$\langle -7, 0, -4 \rangle$

Lesson 8-4 *(Pages 505–511)*

Find each inner product and state whether the vectors are perpendicular. Write *yes* or *no*.

1. $\langle 3, 4 \rangle \cdot \langle 2, 5 \rangle$ 6 + 20

2. $\langle -3, 2 \rangle \cdot \langle 4, 6 \rangle$

3. $\langle -5, 3 \rangle \cdot \langle 2, -3 \rangle$

4. $\langle 8, 6 \rangle \cdot \langle -2, -3 \rangle$

5. $\langle 3, 4, 0 \rangle \cdot \langle 4, -3, 6 \rangle$

6. $\langle 4, 5, 1 \rangle \cdot \langle -1, -2, 3 \rangle$

12 + -12 + 0

yes

Find each cross product. Then verify that the resulting vector is perpendicular to the given vectors.

7. $\langle 1, 0, 3\rangle \times \langle 1, 1, 2\rangle$

8. $\langle 3, 0, 4\rangle \times \langle -1, 5, 2\rangle$

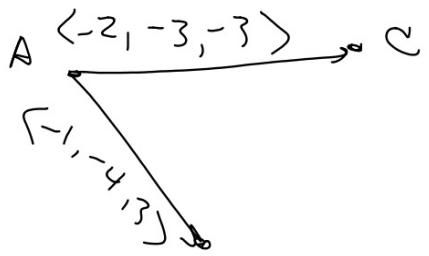
$$\begin{vmatrix} \vec{i} & \vec{j} & \vec{k} \\ 1 & 0 & 3 \\ 1 & 1 & 2 \end{vmatrix} = +\vec{i}\begin{vmatrix} 0 & 3 \\ 1 & 2 \end{vmatrix} - \vec{j}\begin{vmatrix} 1 & 3 \\ 1 & 2 \end{vmatrix} + \vec{k}\begin{vmatrix} 1 & 0 \\ 1 & 1 \end{vmatrix}$$

$$-3\vec{i} + 1\vec{j} + 1\vec{k}$$

$1(-3) + 0(1) + 3(1) = -3 + 3 = 0$ ☺

$-3(1) + 1(1) + 1(2) = -3 + 1 + 2 = 0$ ☺

A (2, 5, 3) B (1, 1, 6) C (0, 2, 0)



$$\begin{vmatrix} \vec{i} & \vec{j} & \vec{k} \\ -2 & -3 & -3 \\ -1 & -4 & 3 \end{vmatrix}$$

$+\vec{i}\begin{vmatrix} -3 & -3 \\ -4 & 3 \end{vmatrix} - \vec{j}\begin{vmatrix} -2 & -3 \\ -1 & 3 \end{vmatrix} + \vec{k}\begin{vmatrix} -2 & -3 \\ -1 & -4 \end{vmatrix}$

$-9 \quad 12 \qquad 6 \qquad 3 \qquad 8 \qquad 3$

$-21\vec{i} - 3\vec{j} + 5\vec{k}$